



IUSSP ■ International Union for the Scientific Study of Population

Policy & Research Papers

# Aging in Developing Countries: Building Bridges for Integrated Research Agendas

22

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The International Union for the Scientific Study of Population (IUSSP) is an international professional association that brings together over 2,000 population specialists from all over the world to address key population issues. It is composed of demographers, economists, sociologists, statisticians, physicians, public health officers, family planners, administrators and policy makers from 140 countries. Founded in 1928, the IUSSP is internationally recognized for its role in identifying emerging and critical population and development issues, encouraging scientific research on these topics, and sponsoring international seminars, workshops, conferences, training sessions, and Internet forums at which critical issues can be discussed and debated.

One of the main functions of the IUSSP is to stimulate interest in population matters among governments, national and international organizations, the scientific community and the general public. In order to bring the results of policy relevant IUSSP scientific activities to the attention of governments and civil society organizations concerned with population issues, the IUSSP began the Policy and Research Papers series.

The outcomes of IUSSP meetings are also disseminated through a wide range of publications: the IUSSP website, edited volumes and articles in leading peer-reviewed journals. The results of its work are also communicated to international governing and policy-making institutions with which IUSSP has special consultative status, such as the Economic and Social Council of the United Nations.

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This Policy and Research Paper presents findings and recommendations from the International Seminar on Aging in Developing Countries: Building Bridges for Integrated Research Agendas, organized by the IUSSP Panel on Aging in Developing Countries, the Latin American Demography Center (CELADE), the Network for Research on Aging in Developing Countries (REALCE), and the Network for Researchers on Aging in Developing Countries (University of Michigan), with the financial support of the National Institute on Aging (NIA/NIH), CELADE and UNFPA. The Seminar was held in Santiago, Chile, April 23-24, 2007.

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## EXECUTIVE SUMMARY

**T**he 21st century will be marked by sharp demographic aging and most of the elderly population will reside in today's developing countries. In these countries, the aging process will be very rapid, while critical, longstanding problems related to education, health and employment remain unsolved. The consequences of greater longevity include increases in chronic diseases and disability, income insecurity given the frail economies and limitations of social security in developing countries, and social and family adjustments. Acknowledging that the impacts of population aging are manifold and that research can play an important role in addressing these impacts, IUSSP organized an International Seminar on Aging in Developing Countries. The seminar aimed at "building bridges for integrated research agendas."

Socio-economic status is a key determinant of health conditions of the elderly. At the same time, health in old age affects social and economic opportunities for the elderly, their families and society. Frequently, the elderly depend on the younger generation and this dependency increases with older age. By and large, these transfers occur in households and within the family, as state-funded support does not cover all elderly populations, benefits are meagre, and, at least in the recent past, of diminishing magnitude. Social security, in particular, is limited and there is a need to overhaul the traditional system and transform it into one that is socially and economically viable.

Cooperation among countries is important to manage present problems and prevent future problematic situations. Of particular value is sharing experiences among developing countries. New data and research to understand the many dimensions of population aging are essential for planning and policies.

## THE WORLD-WIDE CHANGING DEMOGRAPHICS OF AGING

In the second part of the 20th Century, both relative and absolute numbers of the elderly population increased sharply, but not uniformly, world-wide. In the 21st century, the majority of the world's elderly population will be in developing countries.

**Table 1**

Population 65+ (millions) and percentages in the World, More Developed Regions, Less Developed Regions (1950-2050)

	World	Developing	Developed	Developing	Developed
1950	131	67	64	51%	49%
1960	159	81	78	51%	49%
1970	200	101	100	50%	50%
1980	261	135	126	52%	48%
1990	322	179	143	56%	44%
2000	421	250	171	59%	41%
2010	529	333	196	63%	37%
2020	719	482	238	67%	33%
2030	977	694	283	71%	29%
2040	1,259	949	310	75%	25%
2050	1,492	1,166	326	78%	22%

UN World Population Prospects 2006

Table 1 shows that between 1950 and 1980 the number of people 65 and over is almost equally distributed between developed and developing regions, but beginning in 1990 a clear difference emerges. In 2010, of the 529 mil-



lion people 65 and over, 63% (333 million) will reside in developing regions compared to 37% (196 million) in the more-developed ones. Projections for 2050 suggest that these figures will be 78% and 22% percent (1,166 and 326 million), respectively.

These numbers also reflect an accelerating rate of increase of this population. Historically, aging in developed societies has been gradual, allowing for spontaneous and planned social and economic adaptations. In developing countries, the process is now taking place at a much faster rate, with ongoing critical problems related to poverty, inequality, health, employment, education and housing.

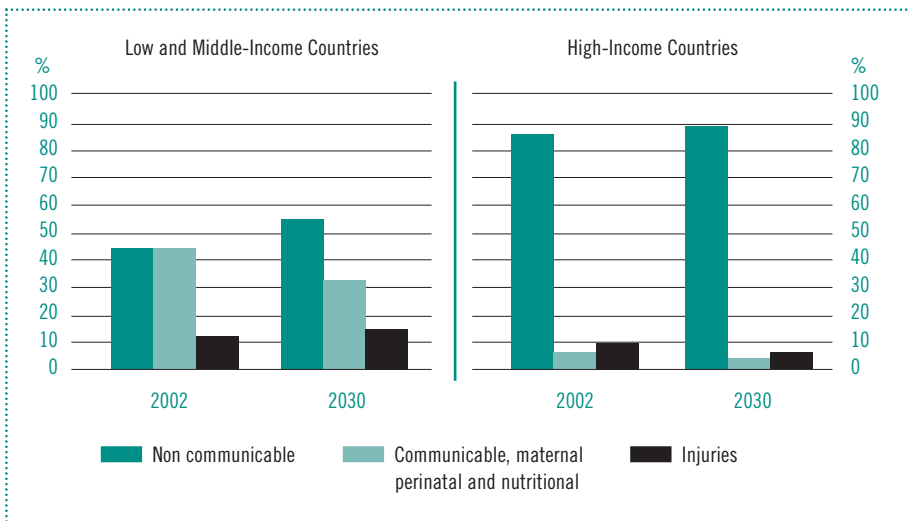
Aging of present and future populations in developing countries is a result of demographic, economic and social changes. High fertility experienced until around 1970, and the steady decline of mortality following improved education, sanitary and medical practices since the 1950's, have all contributed to the rapid rise in the number of the elderly in developing countries in the past six to seven decades. In 1950, life expectancies in developing countries were 50 years for men and 53 years for women. In 2010 they are estimated to be 69 and 76 years, respectively. Projections for 2050 are 74 and 80 years, respectively.

## THE HEALTH IMPLICATIONS OF INCREASED LIFE EXPECTANCIES

**A**s life expectancies and the absolute number of the elderly increase so too does the incidence of chronic diseases and disabilities, including mental impairments. These incurable and progressive ailments have low lethality, but long term effects on well-being and quality of life. Social and economic dependency, as a result, can be lengthy.

**Figure 1**

### The Increasing Burden of Chronic Noncommunicable Diseases: 2002-2030



Source: Lopez AD, Mathers CD, Ezzati M, Jamison DT, Murray CJL, eds. *Global Burden of Disease and Risk Factors*. Washington, DC: The World Bank Group, 2006.

With this in mind it is helpful to divide life expectancy in two parts. One is the healthy life expectancy free of serious health problems and with the capacity to perform daily life activities with autonomy. The other is the period characterized by serious health problems, functional deficiencies and dependency. Do life expectancy increases imply increases of the period in good health? Or, do life expectancy increases imply an extension of the period in bad health and dependency?

In the European Union, population aging has translated into improvements in healthy life expectancies. But there are great country and gender variations. Women's life expectancies are higher, but their life expectancies under poor health and/or with functional problems are also proportionately higher than those for men.

There are warning signs that healthy life expectancies will be shorter in developing countries than in developed ones. For example, there are concerns about the increasing epidemic of obesity at all ages, which predisposes individuals to chronic diseases and disabilities. Data from Latin America, moreover, indicate noticeable increases in mortality because of diabetes, which is also a major cause of disability. And, it is not yet clear what the consequence of disease environments characterized by the joint occurrence of infectious and chronic diseases will be on the severity of chronic conditions, their lethality, and their impact on disability. What this means is that aging and health of populations in developing countries require monitoring.

## FACTORS AFFECTING THE HEALTH OF THE ELDERLY

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### Health in old-age and socio-economic status

Health in general, and for the elderly in particular, is closely related to social and economic conditions. Social relations, family structure, ethnicity, culture, gender, and rural and urban dynamics are all factors correlated with socio-economic status and the health of the elderly.

In developed countries, self-reports of good or excellent health in the elderly are correlated directly with income level. As expected, good health is also inversely correlated with age. Studies in developing countries reveal similar patterns, although analyses focused on elderly populations in developing countries and on the measurement of the causes and effects of health status throughout the life cycle are still limited. Given the persistence of poverty among the elderly in developing countries, a key question is how to measure the inter-play between socio-economic status and health. Poverty has a profound influence on residential arrangements, intergenerational transfers, labour force participation and, ultimately, on health. Further studies are required to provide meaningful and viable policy tools to address the deleterious outcomes of those relations.

It is important, moreover, to review research and experiences in developed countries to gain a better understanding of the aging process in developing countries, identify critical issues, create prevention programs and design health policies. When they are well carried out, these comparisons can be useful to the design and implementation of programs.

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### **Health in old-age and early life experiences**

Research in the United States corroborates European findings suggesting that living conditions and health status in childhood, along with levels of schooling and income of parents, predict health status in old age. Other highly predictive factors are income and assets in adulthood. It has been observed, and most of the evidence comes from developed countries, that nutrition in childhood, productivity in adulthood, and health habits all have a major impact on health in old age. Developing countries are beginning to document the same effects.

There is mounting evidence suggesting that health in old age is correlated with the prevailing conditions during gestation, childhood, adolescence and adult life. Perinatal ailments, nutrition status and frequency of infectious diseases influence health and development during childhood. These, in turn, affect health in adolescence and adult age and appear to be related to insulin resistance, cholesterol levels, blood pressure, metabolic functions and cardiovascular diseases among the elderly.

Evidence from China and Latin America and the Caribbean (Mexico, Puerto Rico, Chile, Brazil, Argentina, Barbados, Uruguay, Costa Rica, and Cuba) indicates that lower socio-economic status and early unfavourable health conditions have partial effects on aging. Thus, the deleterious effects of conditions experienced early in life can affect old-age health status.

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### **Health in old-age and gender**

It is common for impoverished families to prefer to spend more on schooling and nutrition of boys rather than girls. These experiences were common during the childhood and youth of present older-adult cohorts. The effect of this practice on the later health and well-being of elderly men and women has been under-studied. Limited data suggest worse cognitive conditions in women due to childhood disadvantages, mainly lower schooling. It is also known that there

are sharp differentials in morbidity between men and women, but it is not clear to what extent these differentials are a result of differential treatment or differential propensities that are genetically fixed. Fortunately, attitudes have been changing towards gender equality, thus improving the health expectancies of future elderly female populations.

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### **Health in old-age and large-scale historical events**

In the precarious social and economic contexts of low-income countries, large-scale social and historical events may also have an impact on health. Social revolutions, economic crises and sometimes political climate may undermine public health programs and access to medical services and, thus, strongly influence nutritional status and disease prevalence.

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### **Health in old-age and medical conditions**

Some detailed surveys suggest the importance of inflammatory phenomena as precursors of disease and vascular conditions, and, when combined with diabetes, as determinants of disabilities. Under these approaches there is a void in the study of mental impairments, their causes and effects.

A remarkable trend is the world-wide epidemic of obesity. A longitudinal study<sup>1</sup> in the city of Cebu, the Philippines, indicates that low birth-weight, a rapid weight gain in childhood and a great corporal mass in adulthood, particularly in the waist area, are related to high blood pressure, lipid concentration, and damage to the immune system. Obesity is now increasingly observed in developing countries and appears to be caused by economic and cultural changes resulting in defective nutrition and lack of physical activity.

<sup>1</sup> The Cebu Longitudinal Health and Nutrition Survey (CLHNS) is an ongoing study of adolescents and their mothers that began when these adolescents were infants. The study is conducted by a team of researchers from the United States and the Philippines and can be accessed at <http://www.cpc.unc.edu/projects/cebu/>.

## ECONOMIC CHALLENGES FACING THE ELDERLY IN DEVELOPING COUNTRIES

**A** major challenge for the elderly as life expectancies increase and their ability to work decreases is maintaining economic security. In developing countries, this challenge is particularly acute as social security coverage is limited. It is not uncommon for coverage to be restricted to wage-earning workers in urban areas and for benefits to be insufficient, although a few countries, such as Brazil, do offer minimal assistance to the rural population.

When preferential benefits are granted to unions and groups with political power, this may increase pension costs and create financially unsustainable schemes.

## SUPPORT NETWORKS FOR THE ELDERLY

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### Intergenerational transfers

Intergenerational transfers are a mechanism through which one generation provides support to another. Such is, for example, the case of provision of care to children and grandchildren while they are in school and growing up, and the financial and material support that the elderly receive when they withdraw from the labour force and/or become dependents because of declining health or lack of income. The emergence of new social relations, the dominance of a more individualistic and secularized ideology and the development of new modes of economic production are changing intergenerational relations.

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### Family support and living arrangements: pressures on the family and kinship networks

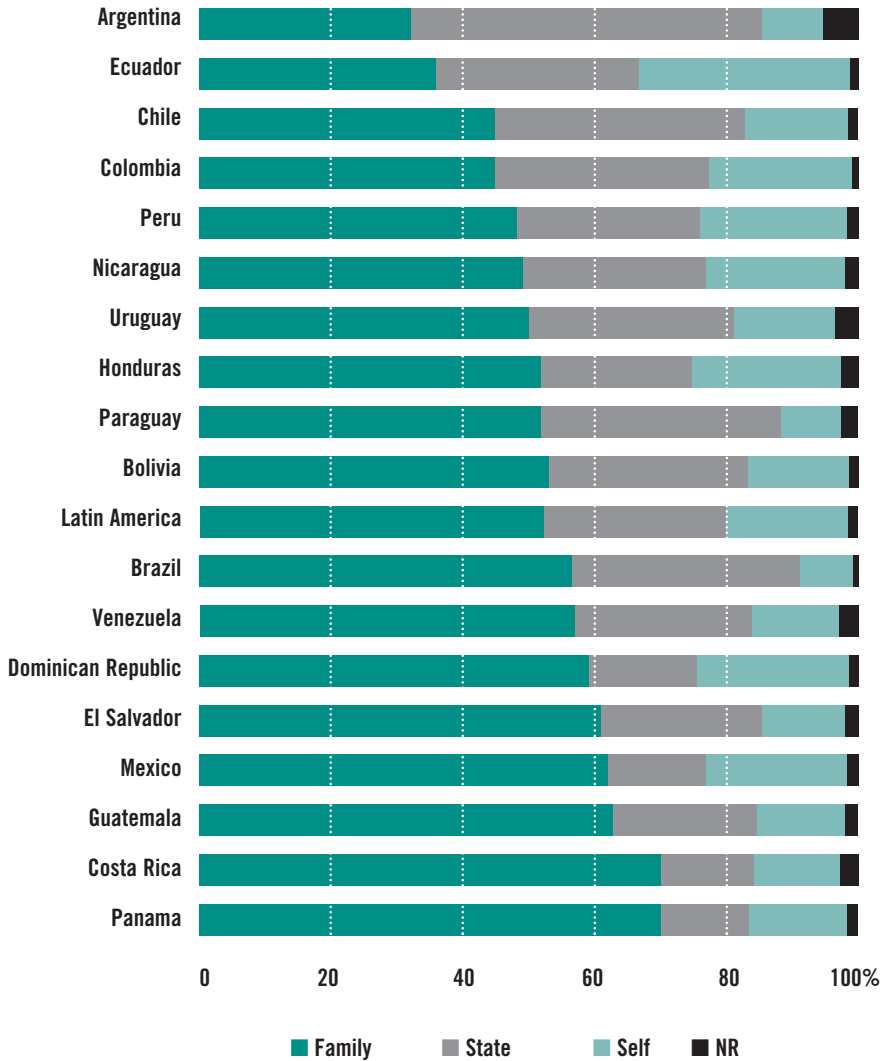
With the decrease in social assistance for the elderly in many low-income countries, support from children and other kin appears more relevant than ever as a means to protect the well-being of the elderly. Yet, little is known about the determinants and extent of these types of support, nor about how they are being affected by changes in family structure, reduction of fertility, lower salaries, job informality, and living arrangements.

A general trend seems to be that the elderly and their families are becoming more responsible for their economic security, health and well-being. A great concern, however, is that the possibilities of kin-based support for an increasing number of aged relatives are diminishing as a result of the new cultural paradigm that emphasizes the individual over the family and forceful demographic changes such as reductions in family size, increasing migration of the young and economic crises.



**Figure 2**

**Main sources of support for older persons**



Source : José Miguel Gutiérrez. Date processing of Latinobarómetro, Sydney, 2006.

Even though Latin America and Egypt show a large proportion of elderly people living in multigenerational homes, living alone appears to be a well-entrenched trend, just as it became well-entrenched in developed countries. In the multigenerational homes, the elderly individual is either the head of the household, or is living with children or grandchildren. Very few elderly men are living alone, whereas the proportion of elderly women living alone is substantially higher. For both genders the proportion is higher in rural areas. The number of elderly living in nursing or retirement homes is, so far at least, proportionately small.

An important gender distinction is the greater willingness and ability of daughters, rather than sons, to provide care for their elderly parents and grandparents. It is necessary to study the physical and emotional burden this places on female caregivers.

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### **Social security and pensions**

In addition to these intergenerational transfers that occur at the micro level, macro level transfers through social security and pension systems also play a role. In developing countries, social security and pensions are generally restricted to the urban, formal, wage-earning sector, and most pensions are insufficient. Retirement systems, moreover, face dire financial problems. In Latin America, it has been argued that these difficulties are consequences of unforeseen demographic aging, lack of actuarial reserves and poor administration. The main reason for the current financial problems, however, may be the high cost of promised pensions and the low level of contributions, even among those receiving the smallest pensions. The discrepancy between benefits and contributions may be the result of successful demands from politically powerful interest groups and unions. In some cases, pensions are granted at very early ages, after only a few years of work, and with minimal or no contributions at all.

It is not surprising, therefore, that there is increasing concern about the health of the pension systems. As a result, the review of viable retirement systems is now receiving much political attention. The economic importance of such a review is great as pensions are an economic commodity with very high costs on both current and future generations. In the last twenty years or so, there has been increasing pressure to move toward scheme-based or defined contributions through individual savings (matched or not by employers), whose accumulated balance determines the amount of pension at the end of individuals' working lives. The drawbacks of this type of scheme are high administration costs, low levels of savings, increased exposure to risks, increases in the national debt due to guaranteed minimum pensions and investment of funds in government-backed bonds of uncertain quality.

Defined contributions may further limit the extension of social security coverage and may jeopardize social and economic sustainability of the entire system. New reforms must lead to multi-pillar systems that include mechanisms of social protection. Long term sustainability will necessitate turning resources of defined contributions into productive (and low risk) investments in areas such as education and health care.

Multiple changes are occurring in Latin America and countries are adopting a variety of mixture schemes. For example, Chile and Mexico have fully embraced defined contribution schemes; Colombia and Peru have parallel schemes in which each worker chooses the system; Argentina, Uruguay and Costa Rica have mixed systems where basic pensions are granted and saving is restricted to the highest wages; Brazil and Venezuela are trying to modify the imbalance between contributions and benefits and avoiding defined contributions. Chile is introducing changes that include basic non-contributory pensions. Nicaragua initially accepted individual savings, but eliminated this feature before implementing their pension scheme. Argentina has cancelled its defined contributions scheme.

## PLANNING AND POLICIES

**T**he seminar identified several issues relevant for planning, policy design and programs for the elderly in developing countries.

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### The many dimensions of population aging

The impacts of demographic aging on health, economic security, social environment and family structure are closely interrelated and affect economic opportunities among the elderly, as well as society's capacity to support this population. Better health among the elderly diminishes expenses and care demand rooted in chronic diseases and related disabilities. Good health also means greater ability and capacity for continued participation in the labour market. Strong family ties are relevant to well-being and a potential source of transfers when they are required in the absence of social and state-based or individual sources.

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### Cooperation between countries and international comparisons

The study of development and policies in developed countries is of great importance for understanding what does and does not work. Of great value too is comparison and collaboration among developing countries. Although there is great heterogeneity among developing countries, circumstances and experiences are often similar in terms of demographic patterns, social values, economic levels and cultural attitudes.

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### **Knowledge and information requirements: evidence-based policies**

Like all social, economic and demographic processes, aging in developing countries is a phenomenon undergoing continuous and sometimes sudden changes. Therefore, it is continually necessary to monitor strategic indicators of conditions, update concepts, generate new data, conduct new analyses and design new applications. This calls for more resources for research (analysis and data collection).

- *The importance of health indicators*

Effective health care policies and prevention programs necessitate appropriate health indicators. Health indicators must be disaggregated by demographic and social characteristics such as age, sex, marital status, family structure, education, occupation, income, and social relations. Health indicators fall into several categories: health related habits (smoking, exercise, nutrition, and prevention), biological risks (cholesterol, glycaemia, blood pressure, obesity, creatinine) and health states (metabolism syndromes, functional capacity, mental impairments, depression). Some of these indicators are derived from biological tests, particularly blood and urine samples, that permit one to assess glucose, blood pressure, triglyceride, cholesterol, and cretonne levels. It is quite hard, however, to obtain these biomarkers and not all of them are useful if only measured at one point in time. Many difficulties are also associated with the way in which blood (or urine samples) are collected, preserved, and analyzed. Before undertaking massive and universal collection of biomarkers, one must have a clear idea about what exactly is being measured and do a precise calculation to evaluate costs and benefits.

- *Research and accounting for cultural idiosyncracies*

Health is a multidimensional concept. Thus, to assess it properly, it is important to select variables and measurements carefully. Concepts, data collection, and methodology to interpret results vary across countries and social groups.

The same questions and answers do not necessarily have the same meaning in different countries and social categories, thus making comparisons of responses to standard questions a difficult if not hazardous enterprise. Procedures that are less sensitive to cultural idiosyncrasies, therefore, deserve to be developed more fully. Currently several methodologies are being explored, including the adaptation and use of vignettes.

- *The importance of longitudinal studies*

A strategic element is the implementation of longitudinal studies on health and socio-economic issues of aging. Cross-sectional or panel surveys should include reference to multiple dimensions of health, including self-reports. Also, more solid measurements need to be acquired through biomarkers of glucose, blood pressure, triglycerides, cholesterol, cretonnes, depression, adiposity, obesity and circumference of waist, along with information on health behaviours like exercise, tobacco consumption and food intake.

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### **The impacts of population aging on developing countries and planning for the future**

The aging process is going to change the existing social and economic relations in the entire developing world significantly. New production and consumption patterns will evolve from the traditional ones. Pressures on the educational system will change as the share of the younger population declines. Pressures on health and social care systems will increase with growing demands from chronic diseases and elderly care. In medical practice, geriatrics will gain relevance. Rising demands for health care and care for the elderly will be accompanied by rising health care costs.

The outlook of rapid aging calls for short-term forecasts with specific goals for planning programs and budgeting, but policies must fit within a long-term framework. Government, legislation, labour organizations, private companies and mass media must pay more attention to the relationship between aging and the national interest, as well as to the implications of aging for the sustainability of social and economic systems.

Long-term scenarios should focus on investments in early childhood, for example in schools and health care, since it is clear that optimization of productivity and quality of adult life are processes that must begin early on in the life-cycle of individuals.

## AGING AND THE MILLENNIUM DEVELOPMENT GOALS

**A** major concern for developed and developing countries is poverty and inequality affecting a large part of humanity. Aging is an additional hurdle for improvements in health and the eradication of poverty. Hunger, illiteracy, inequality and discrimination are inadmissible and the United Nations Millennium Development Goals (MDGs) establish targets and identify gaps to be overcome within a specific time-frame. How will the aging process in developing countries play a role, either hindering these goals or, perhaps, providing an opportunity to reach them? How can we prevent population aging from becoming an obstacle for development? Is it possible for aging to improve rather than undermine social well-being?

To achieve healthy aging, it is imperative to implement preventive care programs that benefit all ages and individuals at all stages of their lives. A desirable and achievable impact of these preventive programs will be to reduce medical care costs. It will then be possible to reallocate resources into health and education programs for all sectors of the population.

Unjustified and economically unviable high pension benefits must be avoided and social security must not be eroded by financial systems whose main goal is profit. Macroeconomic investments in education, health and employment should be promoted. The aim is to increase long-term economic capacity and improve income distribution to alleviate poverty among all sectors of the population.

Changes in culture, technologies, skills and work methods are rapidly making past knowledge and know-how obsolete. The elderly population's lower adaptability to change and reduced capacity to learn new techniques and procedures need to be taken into account. Programs should be designed to bring



older people up to date on the new requirements of modern technology, thereby increasing their well-being by stimulating participation in society. This includes a gradual retirement from work and adaptation to family and community activities (active aging).

Continued research and reformulation of policy design call for additional resources. Only the collection of new information and the performance of new analyses will enable the design of programs and policies that are adapted to the changing reality of the elderly in the developing world.

## LIST OF PRESENTED PAPERS

List of papers presented at the Seminar on Aging in Developing Countries: Building Bridges for Integrated Research Agendas, organized by the IUSSP Scientific Panel on Ageing in Developing Countries the Latin American Demography Center (CELADE), the University of Wisconsin, the Network for Research on Aging in Latin America and the Caribbean (REALCE), and the Network of Researchers on Aging in Developing Countries (University of Michigan), held in Santiago, Chile, 23-24 April 2007.

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### Session 1: Aging around the world: unique features

- ❖ “Demographic transition, population aging, and policy implications in China” by Jiehua Lu and Xuejun Yu
- ❖ “The elderly in Latin America and the Caribbean” by Alberto Palloni and Rebeca Wong
- ❖ “Ageing in South Asia: A profile and emerging issues for future research” by Moneer Alam
- ❖ “Advancing aging: harnessing the INDEPTH Network to extend the field” by Steve Tollman

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### Session 2: Health inequalities

- ❖ “Poverty, wealth inequality and health among older adults living in rural Cambodia” by Zachary Zimmer
- ❖ “The social stratification of health: the case of older Chinese” by Li Yi

- ❖ “A gender perspective on health and function in the urban elderly populations of Latin America and the Caribbean” by Maria Victoria Zunzunegui, François Béland, Beatriz E. Alvarado and Bilkis Vissandjee

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### **Session 3: Life course influences on later life health**

- ❖ “Development, aging and the life course of infectious diseases among Tsimane’ Native South Americans in Bolivia” by Hillard Kaplan, Michael Gurven, Jeff Winking and Daniel V. Eid
- ❖ “Factors associated with self-reported health status among 2000 adults aged 65-68 years participating in the CENEX study in Santiago, Chile.” by Cecilia Albala, Emily Grundy, Alan Dangour and Hugo Sanchez
- ❖ “Effect of early conditions on functional status among elderly in Latin America and the Caribbean” by Malena Monteverde, Kenya Noronha and Alberto Palloni
- ❖ “Resources across the life course and and later-life cognitive functioning among women and men in Ismailia, Egypt” by Katherine Yount
- ❖ “The developmental origins of adult health and function: a review of the evidence and mechanisms” by Christopher Kuzawa

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### **Session 4: Health expectancy and use of health services**

- ❖ “Disability and healthy life expectancy: comparison among Italy, Bulgaria, Canada, and Latin America” by Esther Maria Leon, Madelin Gomez Leon, Nadia Minicuci, Marianna Noale, Alain, Belanger, Margareta Mutafova and Christo Maleskov
- ❖ “Healthy life expectancy in older people with and without diabetes in Latin America and the Caribbean” by Flavia Andrade

- ❖ “The rural–urban divide: healthcare services use among older Mexicans in Mexico” by Jennifer J. Tovar, Soham Al Snih, MD, Kyriakos Markides, Laura A. Ray and Ronald J. Angel
- ❖ “Short-term trends in functional limitation and disability among older Asians: a comparison of five Asian settings” by Mary Beth Ofstedal, Zachary Zimmer, Albert I. Hermalin, Angelique Chan, Yi-Li Chuang, Josefina Natividad and Zhe Tang

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**Session 5: What should we be measuring to test theories about health and mortality? Biomarkers//self-reports//Anthropometric**

- ❖ “Collecting, validating and using data on biomarkers and diet. The CRELES experience” by Luis Rosero-Bixby
- ❖ “The Taiwan biomarker project” by Ming-Cheng Chang, Dana Gleib, Noreen Goldman, and Maxine Weinstein
- ❖ “Cross-population comparability of self-reported health data: issues and possible solutions” by Somnath Chatterjee
- ❖ “The association of childhood socioeconomic conditions with healthy longevity at the oldest-old ages in China” by Zeng Yi, Danan Gu, and Kenneth C. Land

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**Session 6: On intergenerational transfers**

- ❖ “Inter-age transfers in Chile 1997: economic significance” by Jorge Bravo and Mauricio Holz
- ❖ “Determinants of support among older people: a comparative study of Costa Rica, Spain and England” by Karen Glaser, Luis Rosero, Dolores Puga, Teresa Castro, and Emily Agree

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### **Session 7: On intrafamily exchanges and residential arrangements**

- ❖ “Demographic change and the living arrangements of the elderly: the case of Brazil” by Leticia Marteleto
- ❖ “Living arrangements and informal support to older adults in Egypt” by Leila Nawar
- ❖ “Elderly women in India: factors affecting their living arrangements” by Soumitra Ghosh and P. Arokiasamy

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### **Session 8: Study designs we should pursue to increase comparability of results**

- ❖ “Interdisciplinary social science research and public policies: understanding and improving the living conditions of Europe’s elder citizens” by Axel Boersch-Supan and Karsten Hank
- ❖ “Aging in South Korea: the Korean Longitudinal Study of Aging” by Jinkook Lee
- ❖ “The WHO study on global ageing and adult health (SAGE)” by Somnath Chaterjee

### ***Suggested Readings***

- ❖ Population Reference Bureau, “Global Aging: The Challenge of Success”, *Population Bulletin*, 2005. <http://www.prb.org/pdf05/60.1GlobalAging.pdf>.
- ❖ Kinsella, Kevin and Victoria A. Velkoff, “*An Aging World: 2001*” U.S. Census Bureau, International Population Reports, Washington, DC, 2001. <http://www.census.gov/prod/2001pubs/p95-01-1.pdf>.

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## **Aging in Developing Countries: Building Bridges for Integrated Research Agendas**

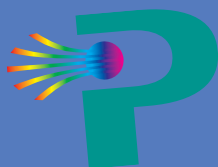
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